

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Charles Savoie Examiner: Uyen T. Le
Serial No.: To Be Assigned Group Art Unit 2171
Filed: March 1, 2002 Docket: G&C 30566.127-US-C1
Title: PROCESSING EDIT DECISION LIST DATA

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By: Isabell Ogata

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PRELIMINARY AMENDMENT

Commissioner for Patents
Washington, D.C. 20231

Dear Sir:

Prior to a first Office Action, please amend the above-identified application as follows. Please note that in compliance with the new rules under 37 C.F.R. §1.121, the amended specification and claims are presented in "clean" form with marked-up versions provided in the Appendices.

IN THE SPECIFICATION

Please insert the following paragraph immediately subsequent to the title

This application is a continuation of application Serial No. 09/123,945, filed July 28, 1998, entitled "PROCESSING EDIT DECISION LIST DATA", which application claims priority to United Kingdom application serial number 97 16 033.7 filed on July 30, 1997, which applications are incorporated herein by reference.

Please amend the paragraph on page 4, line 14, as follows:

Figure 6 details the identification step included in Figure 5.

IN THE CLAIMS

Please cancel claims 2 and 3, and amend claims 1, 4, 5, 12, 13, and 20 as follows:

1. (AMENDED) Data processing apparatus, comprising input devices, a storage device, a processing device and output devices; wherein said storage device is configured to receive data representing an edit decision list;

said edit decision list has edit decisions, including a first and a last of said edit decisions, each comprising edit data and frame range data;

an input device applies input data to said processing device in response to user manipulations specifying changes to said edit data; and

said processing device is configured to identify time references associated with the identified edit data, to recalculate said frame range data which said identified edit data is applicable to in response to said time references associated therewith, and to write said recalculated frame range data to said storage device to integrate said recalculated frame range data within the boundaries delimited by said first and last edit decisions.

2. (CANCELED)

3. (CANCELED)

4. (AMENDED) A method of processing data representing an edit decision list, wherein said edit decision list has edit decisions, including a first and a last of said edit decisions, each comprising edit data and frame range data, said method comprising the steps of

loading an edit decision list into addressable memory locations;

receiving input data in response to user manipulations of an input device identifying edit data and a modification to said edit data;

identifying time references associated with the identified edit data;

recalculating said frame range data which said identified edit data is applicable to in terms of said time references associated therewith and said user specified modification; and

writing said modified frame range data to an addressable storage location to integrate said recalculated frame range data within the boundaries delimited by said first and last edit decisions.

5. (AMENDED) A method according to claim 4, wherein said edit data represents an edit type and said frame range data represents a range of source frames, wherein

said edit type is modified resulting in modifications being made to said source range, said modifications relating to the recalculation of the range of source frames subsequently to the insertion of a new edit type.

6. (UNCHANGED) A method according to claim 5, wherein said edit type represents a cut and said cut is modified to represent a dissolve or a wipe.

7. (UNCHANGED) A method according to claim 6, wherein said dissolve or wipe frames require input frames from two sources and said source range is modified to represent an overlap of frames for the duration of said wipe or said dissolve.

8. (UNCHANGED) A method according to claim 4, wherein said edit data represents a unique line identifier and said frame range data represents a range of output destination frames, wherein

said unique identifier is modified resulting in modifications to said destination range.

9. (UNCHANGED) A method according to claim 8, wherein said identified function is a copy, edit decisions are copied to create additional uniquely identified lines and said destination ranges are modified to specify new output images.

10. (UNCHANGED) A method according to claim 9, wherein the position of said new lines is defined by a process of dragging and dropping an identified range of lines within the existing edit decision list.

11. (UNCHANGED) A method according to claim 4, wherein frame ranges are modified by performing calculations upon time codes defining frames in terms of hours, minutes, seconds and frame numbers.

12. (AMENDED) A computer-readable medium having computer-readable instructions executable by a computer such that said computer performs the steps of:

loading an edit decision list equipped with edit decisions, including a first and a last of said edit decisions, each comprising edit data and frame range data into addressable memory locations;
receiving input data in response to user manipulations of an input device identifying edit data and modifications to said edit data;
identifying time references associated with the identified edit data;
recalculating said frame range data which said identified edit data is applicable to in terms of said time references associated therewith and said user specified modification; and
writing said modified frame range data to an addressable storage location to integrate said recalculation frame range data within the boundaries determined by said first and last edit decision.

13. (AMENDED) A computer-readable medium having computer-readable instructions according to claim 12, such that when executed by a computer said edit data represents an edit type and said frame range data represents a range of source frames, wherein said edit type is modified resulting in modifications being made to said source range, said modifications relating to the recalculation of the range of source frames subsequently to the insertion of a new edit type.

14. (UNCHANGED) A computer-readable medium having computer-readable instructions according to claim 13, such that when executed by a computer said edit type represents a cut and said cut is modified to represent a dissolve or a wipe.

15. (UNCHANGED) A computer-readable medium having computer-readable instructions according to claim 14, such that when executed by a computer said dissolve or wipe frames require input frames from two sources and said source range is modified to represent an overlap of frames for the duration of said wipe or said dissolve.

16. (UNCHANGED) A computer-readable medium having computer-readable instructions according to claim 12, such that when executed by a computer said edit data represents a unique line

identifier and said frame range data represents a range of output destination frames, wherein said unique identifier is modified resulting in modifications to said destination range.

17. (UNCHANGED) A computer-readable medium having computer-readable instructions according to claim 16, such that when executed by computer said identified function is a copy, edit decisions are copied to create additional uniquely identified lines and said destination ranges are modified to specify new output images.

18. (UNCHANGED) A computer-readable medium having computer-readable instructions according to claim 17, such that when executed by a computer the position of said new lines is defined by a process of dragging and dropping an identified range of lines within the existing edit decision list.

19. (UNCHANGED) A computer-readable medium having computer-readable instructions according to claim 12, such that when executed by a computer frame ranges are modified by performing calculations upon time codes defining frames in terms of hours, minutes, seconds and frame numbers.

20. (AMENDED) In a computer system having a graphical user interface including a display and a user interface selection device, a method of processing data representing an edit decision list equipped with edit decisions, including a first and a last of said edit decisions, wherein

said edit decision list is displayed to a user as lines of EDL text having edit data and frame range data;

a user identifies time references associated with the identified edit data and modifies edit data by operation of said selection device; and

in response to machine-executable instructions, frame range data is recalculated in response to said manual modification of said edit data to integrate said recalculated frame range data within the boundaries determined by said first and last edit decisions.

REMARKS

Prior to a first Office Action in this application, Applicant requests that original claims 2 and 3 be canceled and claims 1, 4, 5, 12, 13, and 20 be amended. These amendments do not involve any new matter or objectionable changes. When the Examiner takes this application up for action, he is requested to take the foregoing into account.

Additionally, prior Office Actions rejected the independent claims based on Rayner (0 526 064 A2). The following remarks are submitted in view of these prior rejections.

A. The Applicant's Invention

The Applicant's invention comprises a processing system for processing data representing edit decision lists (EDLs). The EDLs store edit decisions with edit data, representing the type of edit to take place, a first and last edit decisions, and frame range data, representing the frames over which the edit is to take place. An input device applies input data to the processing system in response to user manipulations specifying changes in the edit data. The processing device is configured to time references associated with the identified edit data, recalculate frame range data that the identified edit data is applicable to in response to the time references and to write the frame range data to storage to integrate the recalculated frame range data with the boundaries delimited by the first and last edit decisions.

B. The Rayner Reference

European Patent No. 0 526 064 A2, filed by Bruce A. Rayner, issued February 3, 1993, and assigned to The Grass Valley Group, Inc., discloses a video editing system operator interface for visualization and interactive control of video material. An operator interface for a video editing

system provides a visual sense of the content of video sequences, as well as their length, while also providing enhanced interactive control of locations and time alignments of the video. As the video sequence is processed into the system, a small but representative sample of each frame is saved in a local memory, while the video itself is stored in mass storage. These samples are used to provide a video pictorial timeline of the underlying stored video. The location of an operator's view into the video sequence is controlled by a cursor's movement along a detailed video pictorial timeline, a reverse motion area and a forward motion area to provide VTR control for location changes on the video tape. The cursor's movement can be controlled by a mouse or a knob. Icons, either static or dynamic, are produced within the motion areas to indicate the amount of selected velocity.

Timelines can be marked with time marks, roughly aligned and then automatically fine aligned by the system according to their respective time markers. The editing results associated with these timelines are also time aligned as a result of this process.

C. The Applicant's Independent Claims Are Patentable Over The Rayner Reference

The Prior Office Actions argue that Rayner discloses a data processing apparatus including input device, a storage device, a processing device and output device. The Office Action states that Rayner also shows an edit decision list (EDL), including edit decisions with edit data and frame range data, both stored in memory. Consequently, the Office Action asserts that Applicant's independent claims are anticipated by Rayner.

However, the above amendments clearly differentiate Rayner. Specifically, the Applicant's independent claims include novel and non-obvious limitations directed to identifying time references associated with the identified edit data, recalculating frame range data which said identified edit data is applicable to in response to the time references associated therewith, and writing the recalculated

frame range data to the storage device to integrate the recalculated frame range data within the boundaries delimited by the first and last edit decisions.

There are distinct differences between modifications made to edit data within Rayner, as compared to the Applicant's invention. In Rayner, any changes performed to the existing EDL are appended to the EDL in a linear and sequential way. In contrast, modifications made to edit data according to the Applicant's invention involves the necessary re-calculation of the frame range data in terms of time references associated therein, and enables the changes to be seamlessly integrated within the boundaries delimited by the first and the last edit decisions contained within the EDL.

Therefore, should a further edit decision require implementation at a later stage within an editing process defined by the EDL (thus require the implementation of the further edit decision within the boundaries of the EDL), then after the further edit decision has been implemented, the frame range data which corresponds to the initial edit decisions would have to be manually recalculated with the system according to Rayner; whereas Applicant's invention carries out this function automatically.

The amendments above make it absolutely clear in those claims that the "modified frame range data" of the present invention is different from the "modified frame range data" in the system according to Rayner because the modified frame range data in the Applicant's invention is not appended to the current EDL but is simply amended to reflect the change required by the new edit data. Consequently, the various elements of the Applicant's claimed invention together provide operational advantages over the system disclosed in Rayner.

Applicant therefore submits that these amended claims clearly bring out the distinction between the present invention and Rayner in that in the present invention changes to the existing EDL are seamlessly integrated within the boundaries delimited by the first and last edit decisions

contained within the EDL which contrasts with Rayner in which any changes performed on the existing EDL are appended to the EDL in a linear and sequential way.

By incorporating the EDL changes at the appropriate point within the EDL sequence, rather than accumulating those changes at the end of the EDL sequence significant assistance is given to the operator during the editing operation. This is because with Rayner there is significant potential for confusing the editor if, for example, a "cut" operation located half way through an EDL is transformed into a "dissolved" or "wipe" operation because in Rayner information concerning that change would only be found by the editor once he/she reaches the end of the EDL.

There is nothing in Rayner to draw attention to this disadvantage and therefore Rayner, if anything, teaches away from Applicant's invention because the skilled person would have no reason having read Rayner to modify the Rayner arrangement in the manner clearly specified in independent claims 1, 4, 12 and 20.

Accordingly, Applicant submits that the independent claims are novel and nonobvious in view of Rayner and are in condition for allowance.

D. The Applicant's Dependent Claims Are Patentable Over The Rayner Reference

Applicant respectfully submits that dependent claims 2-3, 5-11, and 13-19 are patentable, because of their dependency on independent claims 1, 4, and 12. In addition, these claims recite additional novel and non-obvious elements not shown in the prior art, as described below.

Conclusion

The various elements of Applicant's claimed invention together provide operational advantages over the systems disclosed in Rayner. In addition, Applicant's invention solves problems not recognized by Rayner.

Thus, Applicant submits that independent claims 1, 4, 12, and 20 are allowable over Rayner. Further, dependent claims 5-11 and 13-19 are submitted to be allowable over Rayner in the same manner, because they are dependent on independent claims 1, 4, 12, and 20, respectively, and because they contain all the limitations of the independent claims. In addition, dependent claims 5-11 and 13-19 recite additional novel elements not shown by Rayner.

It is submitted that this application is now in good order for allowance and such allowance is respectfully solicited. Should the Examiner believe minor matters still remain that can be resolved in a telephone interview, the Examiner is urged to call Applicant's undersigned attorney.

Respectfully submitted,

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G&C 30566.127-US-C1

APPENDIX A: VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE SPECIFICATION

Please amend the paragraph on page 4, line 14, as follows:

Figure 6 details the identification step included in Figure [6] 5.

APPENDIX B: VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS

Please cancel claims 2 and 3, and amend claims 1, 4, 5, 12, 13, and 20 as follows:

1. (AMENDED) Data processing apparatus, comprising input devices, a storage device, a processing device and output devices; wherein said storage device is configured to receive data representing an edit decision list;

said edit decision list has edit decisions, including a first and a last of said edit decisions, each comprising [with] edit data and frame range data;

an input device applies input data to said processing device in response to user manipulations specifying changes to said edit data; and

said processing device is configured to identify time references associated with [an associated function of] the identified edit data, to recalculate[calculate a modification to] said frame range data which said identified edit data is applicable to in response to said time references[identified function] associated therewith, and to write said [modified]recalculated frame range data to said storage device to integrate said recalculated frame range data within the boundaries delimited by said first and last edit decisions.

4. (AMENDED) A method of processing data representing an edit decision list, wherein said edit decision list has edit decisions, including a first and a last of said edit decisions, each comprising [with] edit data and frame range data, said method comprising the steps of

loading an edit decision list into addressable memory locations;

receiving input data in response to user manipulations of an input device identifying edit data and a modification to said edit data;

identifying time references associated with [an associated function of] the identified edit data; recalculating[calculating a modification to] said frame range data which said identified edit data is applicable to in terms of said time references associated therewith [response to said identified function] and said user specified modification; and

writing said modified frame range data to an addressable storage location to integrate said recalculated frame range data within the boundaries delimited by said first and last edit decisions.

5. (AMENDED) A method according to claim 4, wherein said edit data represents an edit type and said frame range data represents a range of source frames, wherein

said edit type is modified resulting in modifications being made to said source range, said modifications relating to the recalculation of the range of source frames subsequently to the insertion of a new edit type.

12. (AMENDED) A computer-readable medium having computer-readable instructions executable by a computer such that said computer performs the steps of:

loading an edit decision list equipped with edit decisions, including a first and a last of said edit decisions, each comprising edit data and frame range data into addressable memory locations;

receiving input data in response to user manipulations of an input device identifying edit data and modifications to said edit data;

identifying time references associated with[an associated function of] the identified edit data; recalculating[calculating a modification to] said frame range data which said identified edit data is applicable to in terms of said time references associated therewith[response to said identified function] and said user specified modification; and

writing said modified frame range data to an addressable storage location to integrate said recalculation frame range data within the boundaries determined by said first and last edit decision.

13. (AMENDED) A computer-readable medium having computer-readable instructions according to claim 12, such that when executed by a computer said edit data represents an edit type and said frame range data represents a range of source frames, wherein said edit type is modified resulting in modifications being made to said source range, said modifications relating to the recalculation of the range of source frames subsequently to the insertion of a new edit type.

20. (AMENDED) In a computer system having a graphical user interface including a display and a user interface selection device, a method of processing data representing an edit decision list equipped with edit decisions, including a first and a last of said edit decisions, wherein

said [an]edit decision list is displayed to a user as lines of EDL text having edit data and frame range data;

a user identifies time references associated with the identified edit data and modifies edit data by operation of said selection device; and

in response to machine-executable instructions, frame range data is recalculated[modified] in response to said manual modification of said edit data to integrate said recalculated frame range data within the boundaries determined by said first and last edit decisions.